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परिवेधक (रीमर) — विशिष्टि
(दूसरा पुनरीक्षण)

**Machine Chucking Reamers with
Parallel Shanks — Specification**
(*Second Revision*)

ICS 25.100.30

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Cutting Tools Sectional Committee had been approved by the Production and General Engineering Division Council.

This standard was first published in 1969 and revised in 1978 taking considerable assistance from ISO 521 : 1975 'Machine chucking reamers with parallel shank and morse taper shank', issued by the International Organization for Standardization. The experience gained in implementation of this standard has necessitated this revision.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

MACHINE CHUCKING REAMERS WITH PARALLEL SHANKS — SPECIFICATION

(*Second Revision*)

1 SCOPE

This standard covers the dimensions and requirements for machine chucking reamers with parallel shanks.

2 REFERENCES

The following standards contain provisions, which, through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below:

<i>IS No.</i>	<i>Title</i>
919 (Part 2) : 2014	Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes: Part 2 Tables of standard tolerance classes and limit deviations for holes and shafts
5443 : 1994	High speed steel reamers — Technical supply conditions
7778 (Part 5) : 2003	Small tools sampling inspection procedures: Part 5 Milling cutters
10719 : 1983	Method of indicating surface texture on technical drawings

3 DIMENSIONS

The dimensions shall be as given in Table 1.

4 TOLERANCES

Tolerances on cutting edge length ' l ', shank length ' l_1 ' and overall length ' L ' shall be as given below:

<i>Cutting Edge Length, Shank Length and Overall Length</i>		<i>Tolerance</i>
Over	Up to and Including	
6	30	± 1
30	120	± 1.5
120	315	± 2

5 MATERIAL AND HARDNESS

Material and hardness of reamer shall be according to IS 5443.

6 GENERAL REQUIREMENTS

6.1 Bevel Lead

Bevel lead angle shall be 45° .

6.2 Back Taper

Back taper on the cutting diameter is recommended; when provided the amount of taper shall be in accordance with 7.3 of IS 5443.

6.3 Flutes unless otherwise specified shall be straight flutes for right hand cutting.

6.4 The requirements not covered in this standard shall be according to the requirements as given in IS 5443.

7 SAMPLING

The sampling and criteria of acceptance shall be according to IS 7778 (Part 5).

8 DESIGNATION

8.1 A machine chucking reamer with parallel shank having diameter $d = 12$ mm, made from high speed steel, conforming to this standard and suitable for a hole with tolerance H8 [see IS 919 (Part 2)] shall be designated as:

Chuckling Reamer 12.0 IS 5446

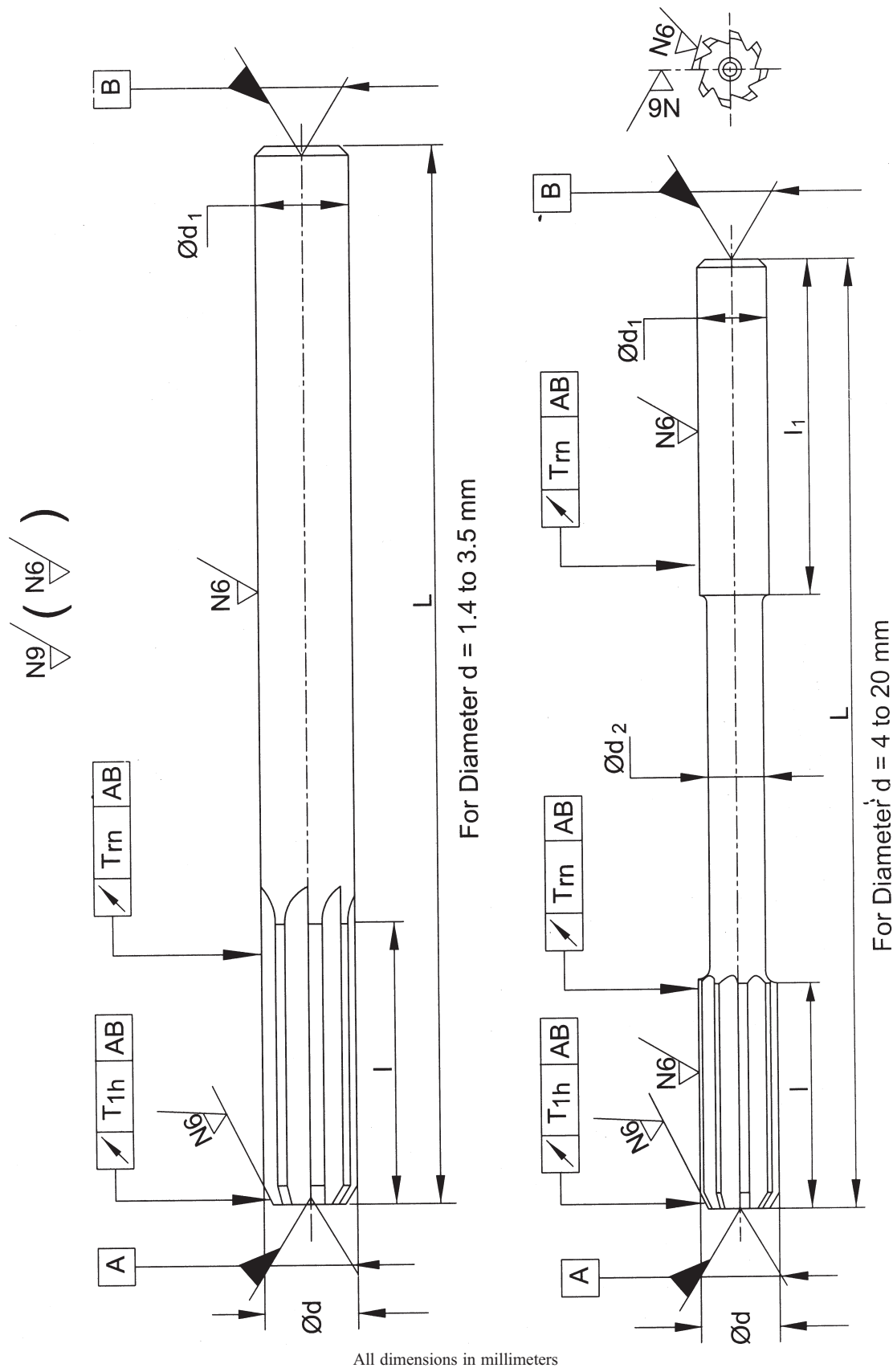
8.2 When the reamer is required for a hole with tolerance other than H8, an appropriate hole tolerance shall be included in the designation after size.

9 BIS CERTIFICATION MARKING

The machine chucking reamers with parallel shanks may also be marked with the Standard Mark.

9.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Table 1 Machine Chucking Reamers With Parallel Shanks
(Clause 3)



Sl No.	Reamer Diameter ¹⁾ d 'm6', ³⁾	Range of Diameter		Shank Diameter ²⁾ d_1 'h9', ³⁾	Neck Diameter d_2	Cutting Edge Length, l	Shank Length l_1	Overall Length L
		Over	Up to And Including					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	1.4	1.32	1.50	1.4	—	8	—	40
ii)	1.5	1.32	1.50	1.5	—	8	—	40
iii)	1.6	1.50	1.70	1.6	—	9	—	43
iv)	1.8	1.70	1.90	1.8	—	10	—	46
v)	2.0	1.90	2.12	2.0	—	11	—	49
vi)	2.2	2.12	2.36	2.2	—	12	—	53
vii)	2.5	2.36	2.65	2.5	—	14	—	57
viii)	2.8	2.65	3.00	2.8	—	15	—	61
ix)	3.0	2.65	3.00	3.0	—	15	—	61
x)	3.2	3.00	3.35	3.2	—	16	—	65
xi)	3.5	3.35	3.75	3.5	—	18	—	70
xii)	4.0	3.75	4.25	4.0	3.6	19	32	75
xiii)	4.5	4.25	4.75	4.5	4.0	21	33	80
xiv)	5.0	4.75	5.30	5.0	4.5	23	34	86
xv)	5.5	5.30	6.00	5.6	5.0	26	36	93
xvi)	6.0	5.30	6.00	5.6	5.0	26	36	93
xvii)	-	6.00	6.70	6.3	5.0	28	38	101
xviii)	7.0	6.70	7.50	7.1	6.0	31	40	109
xix)	8.0	7.50	8.50	8.0	7.0	33	42	117
xx)	9.0	8.50	9.50	9.0	8.0	36	44	125
xxi)	10.0	9.50	10.60	10.0	9.0	38	46	133
xxii)	11.0	10.60	11.80	10.0	9.0	41	46	142
xxiii)	12.0	11.80	13.20	10.0	9.0	44	46	151
xxiv)	13.0	11.80	13.20	10.0	9.0	44	46	151
xxv)	14.0	13.20	14	12.5	12.0	47	50	160
xxvi)	15.0	14	15	12.5	12.0	50	50	162
xxvii)	16.0	15	16	12.5	12.0	52	50	170
xxviii)	17.0	16	17	14	12.5	54	52	175
xxix)	18.0	17	18	14	12.5	56	52	182
xxx)	19.0	18	19	16	14.5	58	58	189
xxxi)	20.0	19	20	16	14.5	60	58	195

¹⁾ The cutting diameter is measured immediately behind the bevel lead.

²⁾ Up to 3.75 mm reamer diameter ' d ', shank diameter shall be equal to reamer diameter.

³⁾ See IS 919 (Part 2).

NOTE — See IS 10719 for surface texture symbol indications.

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